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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,306	02/15/2002	Kazuto Okamura	NAN-0203	8954

23353 7590 07/27/2004

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT PAPER NUMBER

1775

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/075,306	Applicant(s) OKAMURA ET AL.	
	Examiner Cathy Lam	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>May 13, 2002</u> | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Applicant's election of group I (ie. claims 1-5) in the reply filed on May 27, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is vague and indefinite as to what "HDD" is referring to? Furthermore, it is structurally indefinite as to how the insulating resin layer, the metal foil and the stainless steel substrate are (spatially) related. It is unclear whether or not there exist an adhesive between the polyimide layer and the stainless steel substrate and between the polyimide layer and the metal foil? There is lack of antecedent basis for "the adhesive".

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shimose et al (US 6203918).

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It is noted by the examiner that some claims involve processing steps, such as in claim 1, a mean etching rate.....by a 50% aqueous solution of potassium hydroxide at 80°C; and in claim 5. It is the product itself which must be new and unobvious. Unless some unexpected result is shown that occurs due to Applicant's specific process(es), different processing steps are not patentably distinguishing for claims to an article.

Shimose discloses a laminate for use in HDD suspension comprised of a stainless steel base, a plurality of polyimide layers and an electrical conductive (col 1 L 66-col 2 L 2).

The polyimide layers are bonded to both stainless steel base and the electrical conductor wherein the adhesive strength being 0.5 kg/cm or more, respectively (it is equivalent to about 0.5 kN/m). The polyimide layer has a linear CTE of $1 \times 10^{-5}/^{\circ}\text{C}$ to $3 \times 10^{-5}/^{\circ}\text{C}$ (col 2 L 5-14).

The polyimide layers comprised of at least two layers having different linear CTEs, with one polyimide layer has a CTE of $2.5 \times 10^{-5}/^{\circ}\text{C}$ or less and one polyimide layer has a CTE of $3 \times 10^{-5}/^{\circ}\text{C}$ or more (col 3 L 32-40).

The polyimide layers have an etching rate of 0.5 μm or more by using a 100% hydrated hydrazine (col 3 L 66-67). The polyimide layers are prepared from diamines and tetracarboxylic acid anhydrides (col 4 L 1-2).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimose et al (US 6203918) in view of Mochizuki et al (US 5578696) and Takabayashi et al (US 5262227).

Shimose teaches a laminate for used in HDD suspension comprised of a plurality of polyimide layers, a stainless steel base and a conductive layer.

Shimose however does not teach the particular polyimide material and the particular diamine as stated in claims 3-4.

Mochizuki discloses a heat resistant adhesive film which is used in printed circuit boards. The heat resistant adhesive film is comprised of a polyisoimide resin which is coated onto a polyimide film to form a two ply base (col 4 l 25-34).

The polyisoimide resin can be an aliphatic tetracarboxylic acid dianhydride component and a diamine component (col 2 L 65-col 3 L1). The tetracarboxylic acid dianhydride component can be a pyromellitic acid or 3,3',4,4'-benzophenonetetracarboxylic acid (col 3 L 14-20). The diamine component can be 3,4'-diaminodiphenyl ether or 1,3-bis(3-aminophenoxy)benzene (col 3 L 39 & L 53-54).

A copper foil is plated onto one surface and another metal such as stainless steel foil is bonded to the other side of the two ply base, where the copper foil is bonded onto the adhesive (or polyisoimide resin) side (col 4 L 36-41).

The two ply base can be wet etched by using potassium hydroxide solution (col 4 L 46-55).

Mochizuki's polyisoimide resin adhesive would turn into a polyimide resin upon heating. The examiner takes the position that Mochizuki's polyisoimide resin adhesive resembles the polyimide resin layer (B) because the polyisoimide resin is made from the same materials as claimed by the applicant.

Takabayashi discloses a metal foil laminate comprised of two layers of polyimide films and a metal foil.

The two layers of films are aromatic polyimide films (A&B). The metal foil is laminated to polyimide film (B) which is laminated to film (A).

The polyimide film (A) is derived from biphenyltetracarboxylic acid and a 3,4'-diaminodiphenylether, whereas the polyimide film (B) is derived from tetracarboxylic acid and an aromatic diamine (col 3 L 37-42 & col 6 L 1). The two polyimide films (A&B) are very similar in composition or they can be the same, i.e. film (A) can be a 3,3',4,4'-benzophenonetetracarboxylic acid and film (B) can also be a 3,3',4,4'-benzophenonetetracarboxylic acid (col 5 L 56 & col 6 L 26-27). The polyimide films have a Tg in the range of 260°C-360°C (col 6 L 58-60).

Mochizuki is silent about the CTE of the support polyimide film and Takabayashi's polyimide film (A) resembles the presently claimed polyimide resin layer (B).

In view of the prior art teachings, one skill in the art would substitute the polyimide resin layers as disclosed by Mochizuki (ie. the polyisoimide) or the polyimide film (A) in Takabayashi between the metal foil and the stainless steel base, because

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these polyimide resin compositions exhibit good adhesiveness (or high peel strength) and has low CTE and a Tg around 300°C (see Takabayashi col 6 L 58-60).

Regarding to the polyimide resin layer (A) in the present invention. The examiner takes the position that the (supporting) polyimide resin films in the prior art exhibit low CTE values (see Mochizuki col 10 Table 2, and Takabayashi col 10 Table 1).

Therefore, the present invention is obvious over the combination of Shimose in view of Mochizuki and Takabayashi's teachings.

Double Patenting

3. Claims 1-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 10/467,463. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are structurally and material identical.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cathy Lam
Primary Examiner
Art Unit 1775

cfl
July 19, 2004